Hornworms and “Hornless Hornworms”

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Sphingid larvae (tomato hornworm, *Manduca quinquemaculata*, tobacco hornworm, *M. sexta*, and achemon sphinx, *Eumorpha achemon*) (Lepidoptera:Sphingidae), are the largest caterpillars found in Minnesota and can measure up to 4 inches in length. Adult moths, sometimes referred to as a "sphinx", "hawk", or "hummingbird" moth, are large, heavy-bodied moths with narrow front wings. Tomato hornworm larvae develop eight white, lateral "v-shaped" marks. Hornworms have a black projection or "horn" on the last abdominal segment. In contrast, the “hornless hornworm”, *E. achemon*, loses its horn after the first molt, instead having a prominent "eyespot" marking at the hind end.

Moths emerge from their overwintering site in late spring/early summer. After mating, female moths deposit oval, smooth, light green eggs singly on both the lower and upper surface of leaves. Larvae hatch and undergo 5-6 molts and reach the final instar in 3-4 weeks. Fully-grown larvae then drop off of the plants and burrow into the soil to pupate. Moths then emerge from the soil, mate, and then begin to deposit the eggs of the 2nd generation on tomato plants. By early fall, larvae migrate to the soil to pupate and the pupae will remain in the soil all winter and emerge as moths the following spring. There are two generations per year.

Hornworms feed only on solonaceous plants (e.g., potato, tomato), however, hornworms have been observed on grape foliage (see image, below). *Eumorpha achemon* larvae feed upon grape and Virginia creeper foliage.

It is common to find parasitized hornworm larvae in the vineyard. One of the most common parasitoids is a small braconid wasp, *Cotesia congregatus*. Larvae that hatch from wasp eggs laid on the hornworm feed on the inside of the hornworm until the wasp is ready to pupate. The cocoons appear as white projections protruding from the hornworms body. Parasitized hornworm larvae eventually die from the feeding activity of the wasp larvae.
References


http://www.extension.umn.edu/distribution/horticulture/M1224.html.